June 15, 1948. R. A. LAMBERT 2,443,428

CARTON

Filed May 3, 1945

Fig. 1.

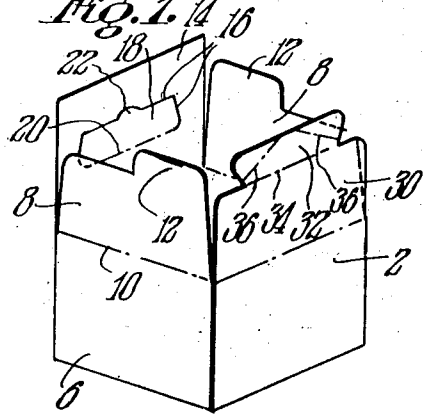


Fig. 2.

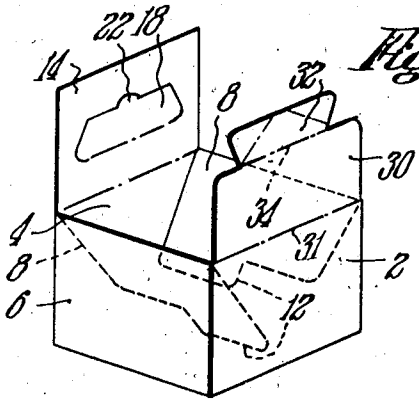


Fig. 3.

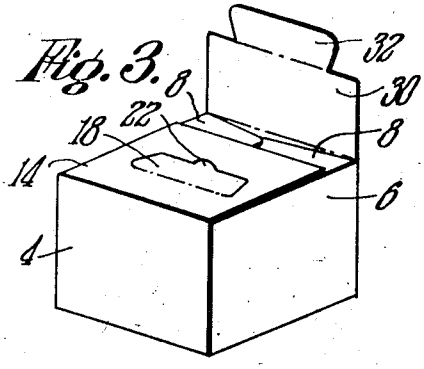
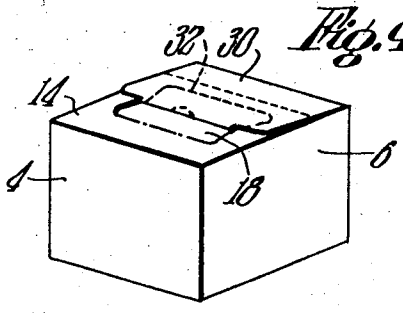


Fig. 4.



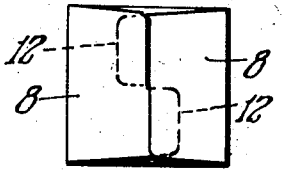


Fig. 5.

Fig. 6.

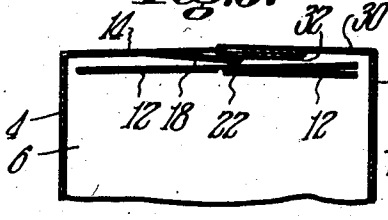
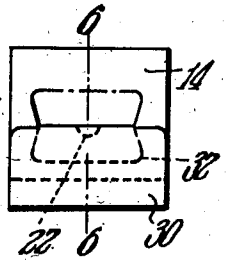


Fig. 7.



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2,443,428

CARTON

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3 Claims. (Cl. 229—39)

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This invention relates to improvements in cartons and is directed more particularly to foldable cartons and flap locking means therefor.

The principal objects of the invention are directed to the provision of a carton and locking means for the closing flaps thereof.

Locking means for the flaps of prior art cartons are usually incapable of securely holding the flaps in overlapping closing relation against pressure or weight applied against the flaps and said locking means are relatively difficult to manipulate and consume time in closing the carton.

According to this invention, locking means is provided which is easily manipulated, rapid in operation and of such a nature as to provide secure locking of the flaps so that they may withstand great pressures and weights.

With the foregoing and various other novel features and advantages and other objects of my invention as will become more apparent as the description proceeds, the invention consists in certain novel features of construction and in the combination and arrangement of parts as will be hereinafter more particularly pointed out in the claims hereunto annexed and more fully described and referred to in connection with the accompanying drawings:

Figs. 1, 2, 3 and 4 are perspective views of a carton showing the closing flaps and locking means in various relative positions;

Fig. 5 is a plan view showing the inner flaps of the construction in overlapping relation;

Fig. 6 is a sectional elevational view on the line 6—6 of Fig. 7 and through the flaps in overlapping locked relation; and

Fig. 7 is a plan view showing the outer flaps in overlapping locked relation.

Referring now to the drawings in detail, the invention will be more fully described.

The novel features of the invention are adapted for use in connection with cartons of various forms but in the form being described front, rear, and side walls 2, 4 and 6 are shown in set up relation. Side or inner flaps 8 are hinged at 10 to opposite side walls 6. These flaps have extensions 12, on their free edges as shown with said extensions arranged in staggered relation.

Said flaps 8 are relatively swingable inwardly so that their ends may pass one another and when released the flaps swing upwardly so that the extension 12 of one flap underlies the other flap. In this way, the flaps are held in locked superposed relation against upward swinging movements, as shown in plan in Fig. 5. Swinging of the flaps inwardly as described is the first operation in closing the opening of the carton.

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A rear or outer flap 14 is hinged to the rear wall 4 for swinging movements and is cut at 16 to form a tab 18 swingable at 20 relative to an opening. Said tab 18 has a retaining lip 22 on its free edge. The flap 14 is adapted to be positioned over the superposed inner flaps 8 and the tab 18 is swingable inwardly and downwardly relative thereof.

Another or front flap 30 is hinged at 31 to the front wall 2 and it has a tuck 32 hinged thereto at 30 for swinging movements. The tuck 32 is insertable through the opening from which the tab 18 is formed and it may be scored at 36 to facilitate the corners of the tab being swingable.

In closing the carton, the side or inner flaps 8 are swung inwardly and downwardly as described and released to assume the locked position shown in Fig. 5.

Then the flap 14 is swung inwardly and over onto the flaps 8, and finally the flap 30 is swung inwardly onto the flap 14. Simultaneously the tuck 32 is bent downwardly to press on the tab 18 and extend through the opening forming said tab, and is then brought up under the marginal edge of flap 14. That is, the truck 32 is doubled up under the marginal edge of the flap so as to lock said flaps 14 and 30 in superposed relation over the interlocked flaps 8.

As the tuck 32 is passed through the opening for tab 18 said tab is moved downwardly and when the tuck is released said tab 18 moves upwardly so that its lip 22 underlies the tuck 32 thus acting as a retainer to hold said tuck in doubled under relation, as shown in Fig. 6.

The side flaps 8 being interlocked as they are and the flaps 14 and 30 being locked with the tab 18 and lip 22 holding them in locked relation the carton is securely closed and the flaps are not likely to be accidentally displaced or unlocked.

The features of the invention are adapted for broad application and may be used for closing the bottom end or top of a carton or container and serve adequately to resist opening against weight or pressure within the carton applied thereagainst.

The structure is such as to facilitate ready and easy manipulation of the various components thereby to overcome the difficulties of prior art structures and at the same time provide a strong durable and economical locking means.

The invention may be embodied in other specific

forms without departing from the essential characteristics thereof. Hence, the present embodiments are therefore to be considered in all respects merely as being illustrative and not as being restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all modifications and variations as fall within the meaning and purview and range of equivalency of the appended claims are therefore intended to be embraced therein.

What it is desired to claim and secure by Letters Patent of the United States is:

1. A carton comprising in combination, opposite and adjacent front and rear and end walls, a pair of inner flaps hinged to the upper edges of said end walls for swinging inwardly into overlapping relation, a front flap and a rear flap hinged to the upper edges of said front and rear walls respectively for swinging inwardly into overlapping relation on said inner flaps and having outer free edges, said rear flaps provided with a longitudinal slit disposed inwardly from and parallel to its free edge terminating inwardly from opposite edges thereof and with other transverse slits extending from opposite ends of said slit towards the upper edge of said rear wall and disposed in a diverging relation forming an opening and a tab having converging ends and hinged to said rear flap at an edge of the opening and adjacent and parallel to the upper edge of said rear wall, and a tuck extending from the free edge of said front flap having outwardly diverging opposite ends and being substantially the same size and shape as the tab of said rear flap whereby as said front flap overlies the rear flap said tuck overlies the tab thereof, said tuck being hinged to the free edge of said front flap whereby with said front flap superposed on said rear flap said tuck may swing downwardly to swing the tab of said rear flap downwardly and pass through the opening of said rear flap and then swing rearwardly to underlie the outer portion of said rear flap adjacent its free edge.

2. A carton comprising in combination, opposite and adjacent front and rear and end walls, a pair of inner flaps hinged to the upper edges of said end walls for swinging inwardly into overlapping relation, a front flap and a rear flap hinged to the upper edges of said front and rear walls respectively for swinging inwardly into overlapping relation on said inner flaps and having outer free edges, said rear flap provided with a longitudinal slit disposed inwardly from and parallel to its free edge terminating inwardly from opposite edges thereof and with other transverse slits extending from opposite ends of said slit towards the upper edge of said rear wall and disposed in a diverging relation forming an opening and a tab having converging ends and hinged to said rear flap at an edge of said opening and adjacent and parallel to the upper edge of said rear wall, and a tuck extending from the free edge of said front flap having outwardly diverging opposite ends and being substantially the same size and shape as the tab of said rear flap whereby

as said front flap overlies said rear flap said tuck overlies the tab thereof, said tuck being hinged to the free edge of said front flap whereby with said front flap superposed on said rear flap said tuck may swing downwardly to swing the tab of said rear flap downwardly and pass through the opening of said rear flap and then swing rearwardly to underlie the outer portion of said rear flap adjacent its free edge, the longitudinal slit of said rear flap formed intermediate its ends to provide a projecting retaining lip on the outer free edge of the tab which is adapted to underlie and hold the said tuck as it underlies the outer portion of said rear flap.

3. A carton comprising in combination, opposite and adjacent front and rear and end walls, a pair of inner flaps hinged to the upper edges of said end walls for swinging inwardly into overlapping relation, a front flap and a rear flap hinged to the upper edges of said front and rear walls respectively for swinging inwardly into overlapping relation on said inner flaps and having outer free edges, said rear flap provided with a longitudinal slit disposed inwardly from and parallel to its free edge terminating inwardly from opposite edges thereof and with other transverse slits extending from opposite ends of said slit towards the upper edge of said rear wall and disposed in a diverging relation forming an opening and a tab having converging ends and hinged to said rear flap at an edge of said opening and adjacent and parallel to the upper edge of said rear wall, and a tuck extending from the free edge of said front flap having outwardly diverging opposite ends and being substantially the same size and shape as the tab of said rear flap whereby as said front flap overlies said rear flap said tuck overlies the tab thereof, said tuck being hinged to the free edge of said front flap whereby with said front flap superposed on said rear flap said tuck may swing downwardly to swing the tab of said rear flap downwardly and pass through the opening of said rear flap and then swing rearwardly to underlie the outer portion of said rear flap adjacent its free edge, the longitudinal slit of said rear flap formed intermediate its ends to provide a projecting retaining lip on the outer free edge of the tab which is adapted to underlie and hold said tuck as it underlies the outer portion of said rear flap, and said tuck provided with score lines extending diagonally across outer opposite ends thereof providing relatively swingable corners for said tuck to facilitate passage of said tuck through the opening in said rear flap.

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